

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
)
Duanfeng He, et al.) Group Art Unit: 2876
)
Application No.: Unassigned) Examiner: K. Frech
)
Divisional of 09/174,466)
)
Filed: June 5, 2001)
)
For: ROTATING PLATE CARRIER FOR)
CHANGING FOCAL DISTANCE OF)
OPTICAL CODE IMAGER (AS)
AMENDED)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-captioned patent application, kindly enter the following amendments.

TITLE PAGE:

Kindly replace the inventors' names on the title page with the following:

--DUANFENG HE

EUGENE JOSEPH

HOWARD SHEPARD--

Please replace the title with the following:

-ROTATING PLATE CARRIER FOR CHANGING FOCAL DISTANCE OF
OPTICAL CODE IMAGER--

IN THE SPECIFICATION:

Page 1, before the first line, insert

--This application is a divisional of Application No. 09/174,466, filed on
10/19/98.--

IN THE CLAIMS:

Please cancel original claims 1-21 and 23-35 without prejudice to their previous
presentation in the parent application or presentation in this or other divisional applications.

Please add the following new claims

--36. (New) An optical system for a handheld optical code reader including an
image sensor, comprising:

an objective lens located in an optical path of the code reader for focusing an
image of an optical code onto the image sensor;

a carrier rotatable about an axis for carrying plural optical elements for
selective positioning in the optical path of the code reader, at least one of said optical
elements comprising a substantially transparent plano plate, which when placed in the
optical path changes the focal distance of the optical system;

means for rotating the carrier for positioning said optical elements in the optical path.

37. (New) The optical system of claim 36, further comprising:

an optical element carried by said rotatable carrier comprising a first monochrome filter.

38. (New) The optical system of claim 37, further comprising another optical element carried by said rotatable carrier comprising a second, different monochrome filter, wherein the monochrome filters are employed to obtain image data to produce a color video display.

39. (New) The optical system of claim 36, further comprising:

a laser pattern projector for projecting a pattern from the handheld optical code reader, and

an optical element carried by said rotatable carrier and selectively positionable in the optical path of the system comprising an optical band pass filter approximately centered on a wavelength of the projected pattern.

40. (New) The optical system of claim 36, wherein the carrier is a wheel rotatable about a central axis thereof and divided into plural sectors each carrying an optical element,

For filing

at least one of which optical elements being adapted for positioning in the optical path for imaging an optical code in a working depth of field of the optical code reader.

41. (New) An optical system for an optical code reader comprising:

an area image sensor;

an objective lens assembly adapted and positioned for focusing an image onto the area image sensor;

a rotatable carrier; and

at least one transparent optical element with substantially parallel, planar surfaces, carried by said rotatable carrier and selectively movable into the optical path of the image sensor by said rotatable carrier;

wherein the system has at least one focal distance adapted for reading code symbols relatively near to the objective lens assembly and another focal distance for imaging scenes relatively far from the objective lens assembly; and

wherein the thickness of the plate is selected to change the focal distance of the system between the one focal distance and the other.

42. (New) The optical system of claim 41, wherein the system operates in a hyper-focal mode when the at least one optical element is moved into the optical path of the image sensor.

43. (New) The optical system of claim 41, wherein the optical element is a glass plate selectively located between the objective lens assembly and the image sensor.

44. (New) An optical imager with plural focal distances Z_R determined by the thickness of plural glass plates sequentially inserted in an optical path between an objective lens assembly and an area image sensor, wherein the plural glass plates have thicknesses selected on the basis of the desired focal distances Z_R and wherein the glass plates are located on a rotating carrier with an axis of rotation generally parallel to and offset from the optical path.--

IN THE ABSTRACT:

Please replace the abstract as follows:

--An imaging optical code reader is adapted for use in producing video displays. A rotating plate carrier is capable of placing several different optical elements into the optical paths of the system including at least one plane parallel plate to change the system focal distance.--

REMARKS

New claims 36-44 are presented for examination.

Respectfully submitted,

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Attachment to Preliminary Amendment dated June 5, 2001

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Title Page, inventors names:

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[PAUL POLONIEWICZ

MARK CORREA

THOMAS BIANCULLI]

HOWARD SHEPARD

Title Page, Title:

[OPTICAL CODE READER FOR PRODUCING VIDEO DISPLAYS AND
MEASURING PHYSICAL PARAMETERS OF OBJECTS] ROTATING PLATE
CARRIER FOR CHANGING FOCAL DISTANCE OF OPTICAL CODE IMAGER

In the Abstract:

[An imaging optical code reader is adapted for use in producing video displays and for use in motion detection surveillance using video compression and narrow band width communication links. An optical system including a plane parallel plate may be employed to change the system focal distance. The imaging optical code reader is also adapted for measurement of physical parameters of a target object including motion, distance, weight and dimensions.] An imaging optical code reader is adapted for use in producing video displays. A rotating plate carrier is capable of placing several different optical elements into

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the optical paths of the system including at least one plane parallel plate to change the system
focal distance.

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